Message

From: Tom Robbins [trobbins@slrconsulting.com]
Sent: 1/11/2022 5:40:16 PM
To: earl.crapps@alaska.gov; Rypkema, James (DEC) [james.rypkema@alaska.gov]; Swartz, Jeanne M (DEC) [jeanne.swartz@alaska.gov]; Stoddard, Jamey [Stoddard.Jamey@epa.gov]
CC: Vincent Fricaud [vfricaud@slrconsulting.com]; Chris Lindsey [clindsey@slrconsulting.com]
Subject: RE: Part 503 CEMS Moisture Determination

Thank you Earl. We look forward to hearing from Jamey.

Regards,

SLR

Tom Robbins
Associate Engineer

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From: Crapps, Earl L (DEC) <earl.crapps@alaska.gov>
Sent: January 10, 2022 3:55 PM
To: Tom Robbins <trobbins@slrconsulting.com>; Rypkema, James (DEC) <james.rypkema@alaska.gov>; Swartz, Jeanne M (DEC) <jeanne.swartz@alaska.gov>; stoddard.jamey@epa.gov
Cc: Vincent Fricaud <vfricaud@slrconsulting.com>; Chris Lindsey <clindsey@slrconsulting.com>
Subject: Re: Part 503 CEMS Moisture Determination

Tom,

The AWWU Asplund facility remains a NPDES permit under EPA authority. Michael Le would be the correct contact in regards to the pretreatment program. I am also including Jamey Stoddard EPA R10 on this email. He may have an alternate contact in Michael's absence.

Earl Crapps
ADEC WDAP Section Manager
Domestic & Industrial Utilities

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From: Tom Robbins <trobbins@slrconsulting.com>
Sent: Monday, January 10, 2022 3:15 PM
To: Rypkema, James (DEC) <james.rypkema@alaska.gov>; Crapps, Earl L (DEC) <earl.crapps@alaska.gov>; Swartz, Jeanne M (DEC) <jeanne.swartz@alaska.gov>
Cc: Vincent Fricaud <vfricaud@slrconsulting.com>; Chris Lindsey <clindsey@slrconsulting.com>
Subject: Part 503 CEMS Moisture Determination

Hi,

We are helping to upgrade the air emissions CEMS at a Part 503 regulated wastewater treatment plant (AWWU Asplund) and trying to get a determination on an alternative moisture method (details below). To give some context, we have spoken with members of EPA EMC, EPA Office of Water, Amber Bennett (ADEC), Kathie Mulkey (ADEC), and Geoffrey Glass (EPA Region X). This query has been tricky because this is a Clean Water Act regulation with an air emissions component so finding the right person has not been easy. Geoffrey Glass said that he would reach out to Michael Le (EPA P503 expert), but it would take some time because Mr. Le is out until 1/21. In the meantime, he recommended that we look at the NPDES permit and contact the delegated regulating body. Mr. Glass said that if someone is unfamiliar with the topics involve below that they should contact himself and he would be happy to direct you in how to proceed. We were hoping that you could help us with the following questions:

1. Who has be delegated authority for this regulation? EPA or ADEC?
2. Is there anyone we should contact in ADEC that could help us make a determination on the below alternative moisture determination proposal?
3. Are there any forms or letter that we need to prepare for ADEC to aid in this?

Alternative Moisture Determination

Part 503 requires a CEMS monitoring THC corrected to 7% Oxygen and zero percent moisture. We are looking at alternatives to determine and record moisture information, such as using historic source test moisture data or performing a monthly moisture determination using wet/bulb dry bulb method rather than using continuous instrumentation. Continuous wet bulb/dry bulb measurements appears uncommon for CEMS manufacturers and poses QA and cost challenges. Determining moisture using a dry oxygen and a wet oxygen is another solution but adds expenses, risks of down time and maintenance to our client.

For this unit, the sludge moisture does not vary when it makes it to the incinerator as it has already gone through the treatment and dehydration process. The natural gas is pipeline quality so there is little moisture variation. There is a wet scrubber upstream of the CEMS probe that further cleans and keep stack temperature relatively constant.

In order to cut down costs and maintenance while preserving data quality, we are considering the following alternatives:

- Using historical data - We have good historic source test data (2015-2020) that shows moisture content to be consistently around 2% with little variation in each test. The value can be input in the CEMS for moisture correction and changed after each emission test.
- Monthly manual testing and correlation generation - We tested a wet/dry bulb measurement manually and found little discrepancies with source testing results. The value can be recorded monthly and input in the CEMS for moisture correction. A correlation equation can be defined based on stack temperature, feed rate and static pressure to provide accurate correction after a year of manual measurements.

- Saturated moisture content value - the stack temperature is continuously monitored. Saturated vapor pressure can be determined and used for moisture correction (about 5% moisture), but it would bias the THC corrected concentration high.

40 CFR 503, Subpart E states
503.45 (c) An instrument that continuously measures and records information used to determine the moisture content in the sewage sludge incinerator stack exit gas shall be installed, calibrated, operated, and maintained for a sewage sludge incinerator.

503.46 (b) Total hydrocarbons, oxygen concentration, information to determine moisture content, and combustion temperatures. The total hydrocarbons concentration and oxygen concentration in the exit gas from a sewage sludge incinerator stack, the information used to measure moisture content in the exit gas, and the combustion temperatures for the sewage sludge incinerator shall be monitored continuously.

We would like to know the likelihood of the alternative method being considered and approved, and the timeline for such approval so we can coordinate with the CEMS vendor and meet CEMS procurement deadlines at the plant. Please let us know at your earliest convenience. Feel free to call or email. Have a nice holiday!

Regards,

SLR

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